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				EXAMINER
8791	7590	06/06/2005		MITCHELL, JASON D

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/037,530	UNICE, W. KYLE
	Examiner	Art Unit	
	Jason Mitchell	2193	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on *21 March 2005*.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-25* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-25* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on *21 March 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 05162005

DETAILED ACTION

1.   This action is in response to remarks filed on 3/21/05.

2.   As per Applicant's request, Claims 1, 3, 5-8, 13, 15-17, 20 and 21 have been

amended. Claims 1-25 are pending in this case.

Response to Arguments

3.   **Applicant's arguments on pg. 17, filed 3/21/05, and regarding 101 rejection**

of claims 1-3 and 9-10 have been fully considered but they are not persuasive.

In the second paragraph on pg. 17 Applicant states:

> Applicant submits that claim 1 is directed towards statutory matter as it provides a
> practical application in the technological arts. The method of claim 1 is directed to a
> computer program module, which includes a computer program component with
> functionality that the computer program module will execute. It further includes an
> installation module to run on a computer. This is more than an abstract idea without
> any tangible application or useful result.

Examiner respectfully disagrees. It is Examiner's position that claim 1 is directed to a

method of distributing a computer program module and not the computer program

module itself. Further this distributing is not tied to any of the technological arts and

could, using the broadest reasonable interpretation, amount to no more the passing a

printout of the code from one person to another. Consequently the rejection is

maintained.

4.   **Applicant's arguments see pg. 17-21, filed 3/21/05, with respect to the**

rejections of claims 1-20 over and in view of Carney have been fully considered

and are persuasive. The rejections of claims 1-20 have been withdrawn.

5.   **Applicant's arguments on pg. 19-20, filed 3/21/05, regarding the 102(e)**
rejection of claims 21-25 as anticipated by Lin have been fully considered but
they are not persuasive.

In the second full paragraph of pg. 20 Applicant states:

> However, this cited portion of Lin is not the same as combining symbols with driver
> code functionality provided by a computer program product to form a kernel version
> independent device driver. Applicant submits that a "compiled service layer" of Lin is
> not the same as the symbols recited in claim 21. Also there is no disclosure or
> suggestion in Lin of forming a kernel version independent device driver.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount

to a general allegation that the claims define a patentable invention without specifically

pointing out how the language of the claims patentably distinguishes them from the

references.

Further, in paragraph [0009] Lin states 'the service layer provides an interface between

the ... operating system'. Any interface inherently includes symbols representing the

functions for which it is providing the interface. Still further Lin discloses 'a kernel

version independent device driver (see par. [0017] 'do not have to recognize changes to

the kernel').

6.   **Applicant's arguments on pg. 21 and filed 3/21/05, regarding the 103**
rejection of claims 1-20 over Lin have been fully considered but they are not
persuasive.

In the third paragraph of pg. 21 Applicant states:

The Office Action implies that a pre-compiled driver is the same as version identification data. Applicant disagrees that a pre-compiled driver is the same as version identification data. Applicant further disagrees that it would be obvious to exclude version identification data as preventing the disclosure of sensitive proprietary information is a separate matter from excluding version identification data.

Examiner respectfully disagrees. Lin's 'pre-compiled driver' cited in par. [0020] 'are associated with ... versions of the ... operating system' clearly indicating some sort of version identification data. Further the motivation stated in the previous Office Action par. 11 'preventing the disclosure of sensitive proprietary information', was not intended to indicate that it would have been obvious to exclude the version identification from the pre-compiled drivers. But instead was intended to provide a motivation to exclude the pre-compiled drivers altogether, and instead use the dynamic device driver of Lin's invention (par [0021] lines 21-23), which provides a method of building drivers which exclude version identification (par. [0017] lines 11-13). Therefore the rejection of independent claims 1 and 11, and dependent claims 2-10 and 12-20 are maintained.

7.   Applicant's arguments on pg. 22-23, filed 3/21/05 and regarding the 103 rejection of claims 21-25 over Carney in view of the "Linux Home Page' have been fully considered but they are not persuasive.

In the second full paragraph on pg. 22, Applicant states:

> Applicant submits that Carney does not disclose or suggest such a feature. The Office Action cites "a symbol definition file comprising current symbol definitions of the operating system" in Carney as disclosing this feature. (Office Action at page 16, point 17.) However, the symbol definitions in Carney are not the same as application program interfaces (APIs) as recited in the present application. Nor is there any disclosure in Carney of importing the APIs from the operating system kernel.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount

to a general allegation that the claims define a patentable invention without specifically

pointing out how the language of the claims patentably distinguishes them from the

references.

Further, those of skill in the art recognize symbol tables as containing identification of

procedures, functions or methods, thus Carney's 'symbol definitions' would anticipate

the 'structures that describe application program interfaces' recited in claim 21.

Accordingly the rejection of independent claim 21 and dependent claims 22-25 are

maintained.

Drawings

Applicant's corrected drawing sheets are sufficient to overcome the objections, which

are consequently withdrawn.

Specification

Applicant's amendments to the specification are sufficient to overcome the objection

which is consequent withdrawn.

Claim Rejections - 35 USC § 112

Regarding Claims 1, 6 and 20: Applicant's amendments to the claims are sufficient to

overcome the rejections, which are consequently withdrawn.

Regarding Claims 3, 13 and 21: As discussed above, Applicant's arguments regarding

the claims were persuasive and consequently the rejections are withdrawn.

Claim Rejections - 35 USC § 101

8.   35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-3 and 9-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims recite a method of distributing a computer program module, steps including distributing a computer program component and distributing an installation module, but do not include an embodiment in a tangible medium such as a computer or computer readable medium, and consequently they do not provide a tangible or useful result. The claims thus recite an abstract idea, with out reciting any practical application in the technological arts. Therefore the claims only recite nonstatutory subject matter.

Claim Rejections - 35 USC § 102

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10.   **Claims 21-25 rejected under 35 U.S.C. 102(e) as being anticipated by US 2003/0,101,290 A1 to Lin et al. (Lin).**

Regarding Claim 21: Lin discloses defining symbols to be imported from a Linux kernel

(par. [0017] lines 3-5 'recognizes the naming convention of the function calls from the

kernel'), the symbols being uniquely associated with a particular version of the Linux

kernel (par. [0007], lines 9-14 'A change to the source code of the kernel ... results in a

change to the names of the function calls') and used by a device driver (par. [0017] lines

5-7 'the compiled service layer interacts with the compiled driver modules'); declaring

structures that describe application program interfaces (APIs) to be imported from the

Linux kernel for operation of the device driver (par. [0007], lines 9-14 'function calls');

obtaining the symbols that define identification data from the Linux kernel (par. [0017]

lines 3-5 'the naming convention'); combine the symbols with driver code to form a

kernel version independent device driver (par. [0022], lines 6-9 'the compiled service

layer is linked to the compiled driver modules'); and dynamically importing the kernel

version independent device driver in the Linux kernel (par. [0022], lines 6-9 'forming a

dynamic device driver').

Regarding Claim 23: The rejection of claim 21 is incorporated; further Lin implicitly

discloses function stubs for registering the device driver (par. [0020], lines 16-18 'the

device driver is loaded'). In order to load the driver, some form of stub must be called.

Regarding Claim 24: The rejection of claim 21 is incorporated; further Lin discloses

defining a memory structure of a particular device for which the device driver is

configured (par. [0009], lines 11-13 'driver modules being specific to a hardware

architecture').

Regarding Claim 25: The rejection of claim 24 is incorporated; further Lin inherently

discloses iteratively importing each symbol's kernel address and places the address into

a local variable for use by the device driver (par. [0016], lines 11-14 'a software

interface between the kernel ... and the driver modules'). To act as an interface each

function call must be linked by address to the object being interfaced.

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

12.   Claim 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over

US 2003/0,101,290 A1 to Lin et al. (Lin).

Regarding Claims 1 and 11: Lin discloses a method of distributing a computer

program module, the method including distributing a computer program component

(par. [0012], lines 1-3 'method of distributing device driver software') which includes

code defining functionality associated with the computer program module (par [0016]

line 7-9 'a set of one or more driver modules') and distributing an installation module

(par. [0016] lines 10-11 'an open source service layer') which, when run on a computer,

obtains the version identification data from the master computer program (par. [0017]

lines 2-3 'configured with respect to the kernel') and combines the version identification

data and the computer program component to define the computer program module

(par. [0017] lines 5-8 'the compiled service layer interacts with the compiled driver

modules').

Lin discloses the computer program component may include version identification data

(par. [0020], lines 16-18 'a pre-compiled device driver ... associated with the kernel')

however Lin also teaches that 'driver modules do not have to recognize changes to the

kernel' (par. [0017] lines 11-13).

It would have been obvious to one of ordinary skill in the art at the time of the invention

to ignore the version of the kernel by excluding the version identification data held in the

computer program component (par. [0020], lines 16-18 'pre-compiled driver'), because

the version identification disclosed in Lin (par. [0020], lines 16-18) identifies the kernel

version, and one of ordinary skill would have been motivated to provide a driver that

would work on any version of the kernel with out disclosing proprietary information (par.

11 'preventing the disclosure of sensitive proprietary information').

Regarding Claims 2 and 12: The rejections of claims 1 and 11 are incorporated,

respectively; further Lin discloses the master computer program is an operating system

(par. [0016] lines 3-4 'an open source operating system') and the computer program

module is a device driver, (par. [0016] line 2 'dynamic device driver') the master

computer program being identifiable by the version identification data (par. [0020] lines

5-8 'standardized versions of the open source operating system').

Regarding Claims 3 and 13: The rejections of claims 2 and 12 are incorporated,

respectively; further Lin discloses the master computer program is selected from the

group including a Linux operating system (par [0020] lines 8-10 'As an example ... an open-source Linux operating system').

Regarding Claims 4 and 14: The rejections of claims 3 and 13 are incorporated, respectively; further Lin discloses the functionality included in the computer program component allows the computer program module to execute an application program interface (API) exported from the master computer program (par. [0019], lines 3-5 'serves and an interface between operating system kernel and device driver modules').

Regarding Claim 5: The rejection of claim 3 is incorporated; further Lin discloses compiling the computer program component into an object file prior to distribution of the computer program module (par. [0018] lines 11-12 'each of the device driver modules is provided to users in executable, or compiled, format').

Regarding Claim 6 and 15: The rejections of claims 5 and 14 are incorporated, respectively; further Lin discloses obtaining version identification data from the operating system and generating a version object file that includes the identification data (par. [0017] lines 2-3 'the compiled service layer is configured with respect to the kernel').

Regarding Claims 7 and 16: The rejections of claims 6 and 15 are incorporated, respectively; further Lin discloses linking the version object file and the computer program component (par. [0022] lines 6-9 'compiled service layer is linked to the compiled driver modules').

Regarding Claims 8 and 17: The rejections of claims 7 and 16 are incorporated,

respectively; further Lin inherently discloses obtaining a kernel specific address of a

module list and passing the address to the computer program module.

Lin explicitly discloses a module list (par. [0016] lines 7-9 'a set of one or more driver

modules') and further discloses the computer program module having accessing the

modules in the module list (par. [0019], lines 6-10 'service layer ... interfaces with

proper device driver module"). In order to do this, the service layer must have

knowledge of the kernel specific address of the module list.

Regarding Claim 9: The rejection of claim 8 is incorporated; further Lin does not

explicitly disclose that the device driver is one of a printer driver, a serial port device

driver, and Ethernet device driver, and a disk drive device driver, but does disclose that

a device driver 'provides the low level interface between the hardware elements of the

computer system and the operating system' (par. [0002] lines 7-12). Because all of the

devices claimed are represented in hardware it would have been obvious to one of

ordinary skill in the art to include one of a printer driver, a serial port device driver, a

Ethernet device driver, and a disk drive device driver as the device drivers disclosed in

Lin (par [0016] line 7-9 'a set of one or more driver modules').

Regarding Claims 10 and 20: The rejections of claims 1 and 11 are incorporated,

respectively; further Lin discloses the installation module forms part of the Computer

Program Component (par. [0016] lines 7-11 'The second element of the device driver is

an open source service layer').

Regarding Claim 18: The rejection of claim 17 is incorporated; further Lin implicitly

discloses the computer program product retrieving a module list export head and

importing the required application program interfaces (APIs) and explicitly discloses

ignoring the version identification data (par. [0017] lines 11-13 'driver modules do not

have to recognize changes to the kernel'). Interfacing with the device driver (par. [0019],

lines 6-10 'interfaces with the proper device driver module to complete the requested

function call') necessarily includes exporting an API from the module list (driver) and

importing that API to the service layer.

Regarding Claim 19: The rejection of claim 13 is incorporated; further Lin discloses the

device driver is dynamically loaded (par. [0022] lines 6-11 'forming a dynamic device

driver').

13.   **Claims 21 and 23-25 are rejected under 35 U.S.C. 103(a) as being**

unpatentable over US 5,303,392 to Carney et al. (Carney) in view of the 'Linux

Home Page' as posted 12/01/2001.

Regarding Claim 21: Carney discloses defining symbols to be imported from an

operating system kernel, the symbols being uniquely associated with a particular

version of the operating system kernel (col. 3, lines 43-45 'providing access to current

symbol definitions of a ... operating system') and used by a device driver (col. 2, lines 2-

3 'a utility ... requests to open the symbol definition image file'); declaring structures that

describe application program interfaces (APIs) to be imported from the operating

system kernel for operation of the device driver (col. 5, lines 13-15 'a symbol definition

file comprising current symbol definitions of the operating system'); obtain the symbols

that define identification data from the operating system kernel (col. 6, lines 49-52 'all

current symbol definitions'); combine the symbols with driver code functionality to form a

kernel version independent device driver (col. 7, lines 9-12 'provides reference to this

symbol definition image file to the requesting utility'); and dynamically importing the

device driver in the operating system kernel (col. 3, lines 43-44 'a dynamically

configured operating system'). Carney does not explicitly disclose the operating system

being a LINUX system, but does disclose the use of a UNIX system (col. 2, lines 64

'UNIX system').

On 12/01/2001 the LINUX homepage (www.linux.org) described Linux as 'a Unix-type

operating system'.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the

invention to implement Carney's invention on a LINUX system instead of a UNIX system

because one of ordinary skill in the art would have desired the ability to deploy the

invention to a broader range of operating systems.

Regarding Claim 23: The rejection of claim 21 is incorporated; further Carney

discloses use of function stubs for registering the device driver (col. 5, lines 5-7

'segment loader is used for dynamically loading the relocatable segments').

Regarding Claim 24: The rejection of claim 21 is incorporated; further Carney

discloses defining a memory structure of a particular device (col. 6, lines 62-66 'the

symbol definition image file') for which the device driver is configured (col. 6, lines 62-66

'a request from a utility').

Regarding Claim 25: The rejection of claim 24 is incorporated; further Carney

discloses iteratively importing each symbol's kernel address (col. 6, lines 49-52

'comprise all current symbol definitions') and placing the address into a local variable for

use by the device driver (col. 6, lines 1-3 'the address of the memory object').

14.   **Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over US**

5,303,392 to Carney et al. (Carney) in view of US 6,298,440 B1 to Siegel (Siegel).

Regarding Claim 22: The rejection of claim 21 is incorporated; further Carney does not

explicitly disclose the programmatic data structure used to maintain the symbol table

(col. 5, lines 62-63 'symbol table'), but does disclose that the symbol table can take

variable forms (col. 6, lines 22-26 'symbol and string tables that are different but

essentially equivalent')

Siegel teaches the use of a linked list (col. 6, lines 49-50 'linked list of resource files') in

an analogous art for the purpose of referencing code resources (col. 6, lines 40-42

'used to resolve references to resources').

It would have been obvious to a person of ordinary skill to use the linked list taught by

Siegel (col. 6, lines 49-50) as the data structure representing the symbol table entries

disclosed in Carney (col. 5, lines 64-66 'symbol definition entries'), because one of

ordinary skill would have been motivated to provide reference to the symbol definition

entries (col. 6, lines 40-42).

**15.   Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over US
2003/0,101,290 A1 to Lin et al. (Lin) in view of US 6,298,440 B1 to Siegel (Siegel).**

Regarding Claim 22: The rejection of claim 21 is incorporated; further Lin does not

explicitly disclose macros that build a linked list, but does disclose mapping kernel

function calls to driver functions (par. [0019], lines 6-10 'service layer which process the

function calls and interfaces with proper device driver module')

Siegel teaches the use of a linked list (col. 6, lines 49-50 'linked list of resource files') in

an analogous art for the purpose of referencing code resources (col. 6, lines 40-42

'used to resolve references to resources').

It would have been obvious to a person of ordinary skill to use the linked list taught by

Siegel (col. 6, lines 49-50) as the data structure representing the mapping between

function calls disclosed in Lin (par. [0019], lines 6-10), because one of ordinary skill

would have been motivated to provide reference to the symbol definition entries (col. 6,

lines 40-42).

Conclusion

16.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

17.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. US 5,732,282 to Provino et al. discloses a Virtual Device Driver

Registry; 6,289,396 to Keller et al. discloses a Dynamic Device Driver Architecture.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jason Mitchell whose telephone number is (571) 272-

3728. The examiner can normally be reached on Monday-Thursday and alternate

Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

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Business Center (EBC) at 866-217-9197 (toll-free).

Jason Mitchell
5/16/05

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